UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,361	10/24/2006	Rejane Pratelli	3338.100WOUS	4338

24113 7590 12/15/2010

PATTERSON THUENTE CHRISTENSEN PEDERSEN, P.A.
4800 IDS CENTER
80 SOUTH 8TH STREET
MINNEAPOLIS, MN 55402-2100

EXAMINER	
KRUSE, DAVID H	

ART UNIT	PAPER NUMBER
1638	

MAIL DATE	DELIVERY MODE
12/15/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,361	PRATELLI ET AL.	
	Examiner	Art Unit	
	David H. Kruse	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6,7,9-12 and 16-21* is/are pending in the application.

4a) Of the above claim(s) *16-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6,7 and 9-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

STATUS OF THE APPLICATION

1. This Office action is in response to the Amendment and Remarks filed on 7 October 2010.

Election/Restrictions

2. Claims 16-21 remain withdrawn from further consideration pursuant to 37 CFR § 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2 June 2008.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 6, 11 and 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Rejane Pratelli (2000, Doctoral Thesis "Identification et caractérisation de canaux potassiques chez la vigne vers une amélioration de la balance acido-basique de la vendange") (the Thesis) an English translation of sections 2.6 and 4.1-4.3 (the Translation) is attached hereto. Translation of the Abstract of the Pratelli Thesis

published online at Refdoc.fr dated 2000 (the Abstract) is also attached hereto. This rejection is repeated for the reasons of record in the Office action mailed on 10 June 2010. Applicants' arguments filed on 7 October 2010 have been fully considered but are not found to be persuasive.

MPEP 2128.01 [R-3]; A doctoral thesis indexed and shelved in a library is sufficiently accessible to the public to constitute prior art as a "printed publication." *In re Hall*, 781 F.2d 897, 228 USPQ 453 (Fed. Cir. 1986). Even if access to the library is restricted, a reference will constitute a "printed publication" as long as a presumption is raised that the portion of the public concerned with the art would know of the invention. *In re Bayer*, 568 F.2d 1357, 196 USPQ 670 (CCPA 1978). In the instant case, the Examiner make the presumption based on the published Abstract that that portion of the public concerned with the art would have known of the invention, as the Abstract identifies the Title, Author and Affiliation of the subject matter.

Pratelli discloses transforming at least one cell of a grape with a gene encoding the outward potassium channel encoded by instant SEQ ID NO: 1, selecting at least one transformed cell and regenerating a transformed vine from the transformed cell at section 2.6.5, pages 10-20 of the Translation. Pratelli discloses overexpression using a CaMV 35S promoter at page 18 of the Translation. Pratelli discloses a transformed vine of *Vitis vinifera* at page 18 of the Translation. Pratelli discloses measuring the presence of a gene encoding an outward potassium channel encoded by instant SEQ ID NO: 1 of the vine in the tissue supplying the storage organs using PCR at page 19, 4th paragraph of the Translation. Hence, Pratelli had previously disclosed the claim limitations.

Applicants argue that independent claim 1 has been amended to clarify that the size of the storage organs and the quantity of tartrate accumulated in the storage organs at the fructification stage are increased. Independent claims 11 and 12 have also been amended to clarify that the size of the storage organs is increased with the aim of the gene encoding the outward potassium channel encoded by SEQ ID NO: 1. Applicants argue that while the Pratelli Thesis reveals the nucleotide sequence of SEQ ID NO. 1, the Pratelli Thesis does not disclose, teach or suggest the effect of SEQ ID NO. 1 on the characteristics of a transformed plant's berries. Applicants argue that the Pratelli Thesis only describes a reduced growth phenotype in the micro-cuttings, with the main findings revealed in the Pratelli (page 7 of the Remarks).

Applicants argue that the objective was to observe whether there is a difference in phenotype to confirm the role of VvSOR in vivo, and the observation was limited to the vegetative juvenile state of the tranformants (microcutting). Applicants argue that a delay in the mutant's growth was observed, particularly in low-potassium medium (page 126), along with a foliar phenotype with disrupted growth for the unmutated VvSOR gene. Applicants argue that the Pratelli Thesis does not reveal any findings concerning an effect of the expression of VvSOR at the fructification stage. Applicants argue that the Pratelli Thesis does not demonstrate that one of the vine's potassium channels, such as VvSOR, allows the acid-base balance to be manipulated. Applicants argue that the Pratelli Thesis fails to teach all the claim limitations of independent claims 1, 11 and 12 (page 8 of the Remarks).

Applicants' arguments are not found to be persuasive. Pratelli had previously disclosed all of the method steps of the claims. The amendment directed to an inherent property does not obviate the rejection. See *Integra LifeSciences I Ltd. V. Merck KGaA* 50 USPQ2d 1846, 1850 (DC SCalif 1999), which teaches that where the prior art teaches all of the required steps to practice the claimed method and no additional manipulation is required to produce the claimed result, then the prior art anticipates the claimed method.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 7, 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Rejane Pratelli (2000, Doctoral Thesis "Identification et caractérisation de canaux

potassiques chez la vigne vers une amélioration de la balance acido-basique de la vendange") (the Thesis) an English translation of sections 2.6 and 4.1-4.3 (the Translation) is attached hereto in view of Pratelli *et al* (2002, Plant Physiology 128: 564-577). Translation of the Abstract of the Pratelli Thesis published online at Refdoc.fr dated 2000 (the Abstract) is also attached hereto. This rejection is repeated for the reasons of record in the Office action mailed on 10 June 2010. Applicants' arguments filed on 7 October 2010 have been fully considered but are not found to be persuasive.

The teachings of the Pratelli Thesis (2000) are outlined above. Pratelli (2000) teaches analysis of transformants using PCR to verify the presence of the transgenic construct (page 19, 4th paragraph of the Translation).

Pratelli (2000) does not teach measuring expression of the gene encoding an outward potassium channel encoded by instant SEQ ID NO: 1 by measuring a quantity of mRNA derived from a transcription of the gene during the development of the storage organ.

Pratelli *et al* (2002) teach using semiquantitative RT-PCR for each development stage of berries for the stomatal inward rectifying potassium channel (SIRK) at page 574, left column, 2nd paragraph. Pratelli *et al* (2002) teach analyzing expression in stalks, roots, stems, leaves, berries 3 weeks before veraison (change of color of the grape berries), berries at veraison and berries 3 weeks after veraison at Fire 5 on page 572.

It would have been *prima face* obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the teachings of Pratelli (2000) to use the

transgenic grape plants in a method of measuring the expression of the transgene in various tissues at varying developmental stages as taught by Pratelli (2002). One of ordinary skill in the art would have been motivated to practice such a method during storage organ development because Pratelli (2000) teaches that the VvSOR gene was isolated from grape berry cDNA library searches (page 21 of the Translation). Given the success of Pratelli (2002), one of ordinary skill in the art would have had a reasonable expectation of success.

Applicants argue that the Pratelli Thesis gives no indication concerning the effect of VvS0R on the characteristics of the berries. Applicants argue that the Examiner errors in finding that Pratelli 2002 cures that deficiency. Pratelli 2002 reports about the molecular characterization of a grape SIRK inward potassium channel, expressed transiently in berries, preferentially in guard cells, and suggests a role in regulating stomata] aperture and berry transpiration or potassium transport and potassium loading into the berries. Applicants argue that Pratelli 2002 does not teach, disclose or suggest any role of an outward potassium channel in the berry. Applicants argue that the cited references, considered in combination or solely, fail to teach, disclose or suggest all the claim limitations of independent claim 7 and a prima facie cased of obviousness has not been established (page 9 of the Remarks). These arguments are not found to be persuasive. Instant claim 7 only recites measuring the expression of a gene encoding SEQ ID NO: 1. Given that Pratelli (2000) had taught instant SEQ ID NO: 1 and where it was isolated the measurement step recited would have been obvious to one of ordinary skill in the art at the time of Applicants' invention.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. No claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The central FAX number for official correspondence is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-1600.

/David H Kruse/
Primary Examiner, Art Unit 1638
14 December 2010